

# Professional Amplifiers



## DW-Series Amplifiers **OPERATING MANUAL AND USER GUIDE**



[www.wharfedalepro.com](http://www.wharfedalepro.com)

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## IMPORTANT WARNINGS & SAFETY INSTRUCTIONS

1. Please read and retain these safety instructions.
2. Heed all warnings in the operating instructions and on the appliance.
3. Do not use this apparatus near water or moisture.
4. Clean only with a dry cloth.
5. Install in a good quality 19" equipment rack.
6. Do not install near sources of heat such as radiators, heat registers, stoves or other apparatus that produce heat.
7. Refer all servicing to authorised personnel.
8. There are no user serviceable parts inside this product. Users should not attempt to service this product. Warranty nullification could result if this is attempted.
9. Servicing is required when the apparatus has been damaged in any way including: Impact damage, power cord/supply damage, liquid spillages, small objects falling into the unit or exposure to moisture. In addition please refer to authorised service personnel if the apparatus is not operating normally.
10. To completely disconnect this equipment from the AC mains disconnect the power plug from the AC receptacle.
11. To prevent fire never place the unit near any naked flame such as a candle.
12. Do not defeat the purpose of the polarized or grounding type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are there for your safety. If the plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
13. USING AMPLIFIERS – In order to avoid damage to drivers and other equipment, it is advisable to establish and follow a routine for powering up and powering down a sound system. With all system components connected, turn on source equipment (mixers, signal processors, record and playback units, etc.) BEFORE powering up amplifiers. Transient voltages from powering up source equipment can damage speakers if amplifiers are already turned on. Make sure that amplifier volumes are set to their minimum settings and power up any system amplifiers LAST. It is recommended that all system components be allowed to stabilize for several seconds before any source signals are introduced or level setting adjustments are made. Similarly, when shutting systems down, turn all amplifiers off first, before powering down any other system components.
14. CABLES – Do not use shielded or microphone cables for connection between amplifiers and speakers. Use only approved speaker cables with proper connectors.
15. RIGGING – SUSPENDING – MOUNTING – Rigging, suspending and mounting of speaker systems can expose members of the public to serious health risks and even death. UNDER NO CIRCUMSTANCES ATTEMPT TO RIG, SUSPEND OR OTHERWISE MOUNT SOUND REINFORCEMENT PRODUCTS UNLESS YOU ARE FULLY QUALIFIED AND CERTIFIED TO DO SO BY RELEVANT LOCAL, STATE AND NATIONAL AUTHORITIES. ALL RELEVANT SAFETY REGULATIONS MUST BE FOLLOWED. IF YOU ARE NOT PROPERLY QUALIFIED OR DO NOT KNOW OF PERTINENT REGULATIONS, CONSULT QUALIFIED PERSONNEL FOR ADVICE.
16. CAUTION – Professional sound reinforcement systems are capable of generating very high sound pressure levels. Take care with placement and operation to avoid exposure to excessive volume levels. Permanent hearing damage can result when operated to extreme levels.

## INTRODUCTION

The Wharfedale Pro DW-Series power amplifiers are designed and constructed to the highest standards. We wish to thank you for entrusting us with your sound.

Please take a few minutes to read through this manual to ensure you get the most from your DW-Series amplifier.

## ABOUT THE DW-SERIES AMPLIFIERS

The DW-Series of professional sound reinforcement power amplifiers are designed for high volume and quality sound reproduction in demanding applications. Housed in a rugged yet portable 2U rackmount chassis the DW-Series is road-ready and can handle a wide range of applications.

The extensive feature list includes dual mono and bridged mono making the DW-Series a versatile contender and ensuring compatibility with the broadest range of tasks. Simple yet effective status indicators make the DW-Series the obvious choice for the busy live sound professional that needs a no-nonsense approach to amplification.

The DW Series are fan cooled with filtered air intakes on the front panel, hot air is expelled from the rear of the unit. The air intakes are foam lined and can be vacuum cleaned from the front of the unit to remove dirt and dust and ensure optimum airflow.

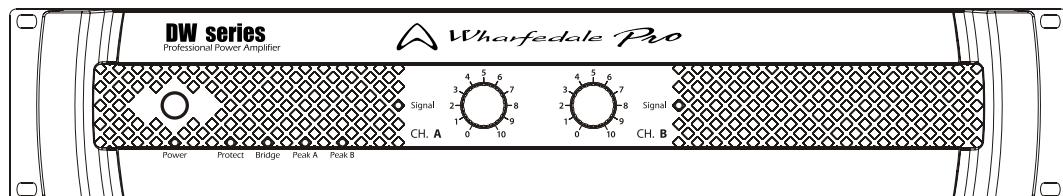
Each channel has independent control over input trim with signal and peak indicators. Status indicators make you aware of AC power supply, bridge mode and the status of the onboard protection system.

The rear panel has XLR inputs with through outputs for parallel wiring of additional power amps while the main outputs use Speakon™ connectors for quick installation and guaranteed durability.

## FEATURES

- ◆ **Switchable stereo and bridged modes**
- ◆ **Individual channel input trim controls**
- ◆ **XLR inputs with through outputs**
- ◆ **Speakon™ main outputs**
- ◆ **Power, Protect, Bridge, Signal and Peak indicators**
- ◆ **Fan cooled with front panel mounted filters**
- ◆ **IEC mains input receptacle**
- ◆ **Road ready 2U rackmount chassis**

## FRONT PANEL



**Power Switch** - Toggles the power on and off



**Protect LED** - Lights up for 3 seconds when the unit is powered up, after this startup period it is used to indicate that protection is being provided. Causes for illumination of the fault LED can include overheating of the heat sink or DC voltage at the outputs. When the problem is corrected the indicator should switch off and normal operation will resume.



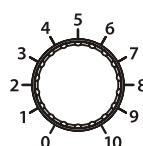
**Peak LED** - Lights up orange when the output signal distortion rises above 1%, indicating that the level is too high. To avoid overheating or damage assess your gain structure.



**Signal LED** - Illuminates to show signal activity above -35dB at the input stage. If there is no illumination check your inputs (including the power supply!) and source devices.

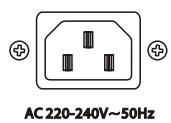
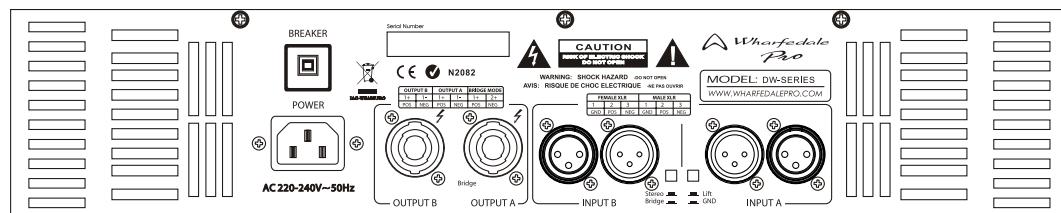


**Power LED** - With the power switch set to on the LED will illuminate. If there is no activity check the AC supply.



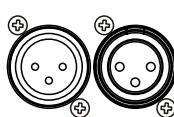
**Gain Controls** - Turn clockwise to increase gain and counter clockwise to decrease.

## REAR PANEL



AC220-240V~50Hz

**Mains Power** - Take care to ensure the voltage selector shows the correct mains voltage for your local mains supply at the installation site. An appropriate mains cord is included in the original packaging, if this is not the case contact your dealer.



**Audio inputs/outputs** - The main XLR input connectors should be connected to the outputs of your mixing console. The XLR outputs are designed to through-connect additional amplifiers in parallel, permanent electrical connection is maintained regardless of the power switch setting.

### Bridged mode connections

When selecting the output mode always make sure that the amplifier is powered down to minimize the risk of any unwanted transient voltages that can damage speakers and hearing.



Stereo   
Bridge

**Stereo mode** - allows both channels to operate independently with the source material amplified according to the input trim and outputted from the corresponding output connector.

**Bridged mono mode** - this allows the amp to be used as a single channel amplifier with increased power when compared to normal stereo operation.

The minimum impedance of a single load is higher in bridged mode, for example the amplifier should not operate with a load less than 2 ohms in stereo mode or 4 ohms in bridged mono mode.



Lift  
GND

**Ground lift switching** - Use the ground lift switch if you are experiencing earth loop issues, as with all the rear panel switching ensure that the unit is safely powered down before the switch is used.

## WIRING

Connecting sources with unbalanced outputs requires bridging PIN1 and PIN3 of the power amps input connectors or removing PIN3, if this is not done hum and HF interference may occur.

Use of high quality balanced cables (with 2 conductors for audio signal plus separate shielding) is recommended as most mixing consoles have balanced outputs. This type of interconnect will greatly reduce the chance of interference, noise or hum.

Observe the table above the Speakon™ outputs that shows the correct terminal connection for the respective output modes. When connecting Speakon™ cables ensure that they are securely locked into place by turning clockwise, and ensure that the cables are fully unlocked before you attempt to remove them.

## POWERING UP

The DW Series is simple to install and operate.

When powering up your DW-Series amplifier make sure that the input trim controls for both channels are at the lowest possible setting. Always ensure that you establish a safe routine to power up all of the stages in your rig, starting from source through to amplifier.

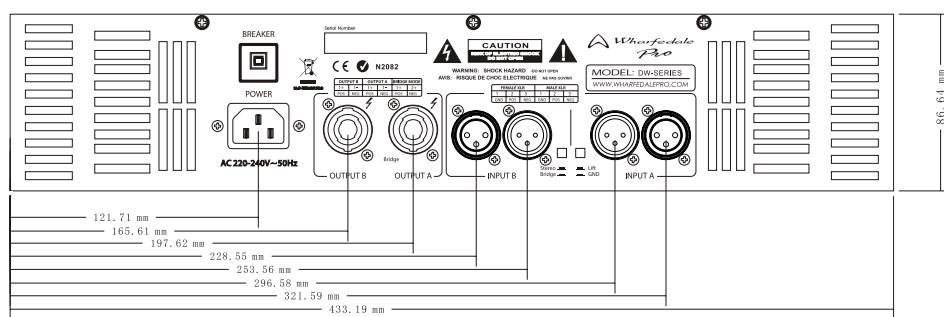
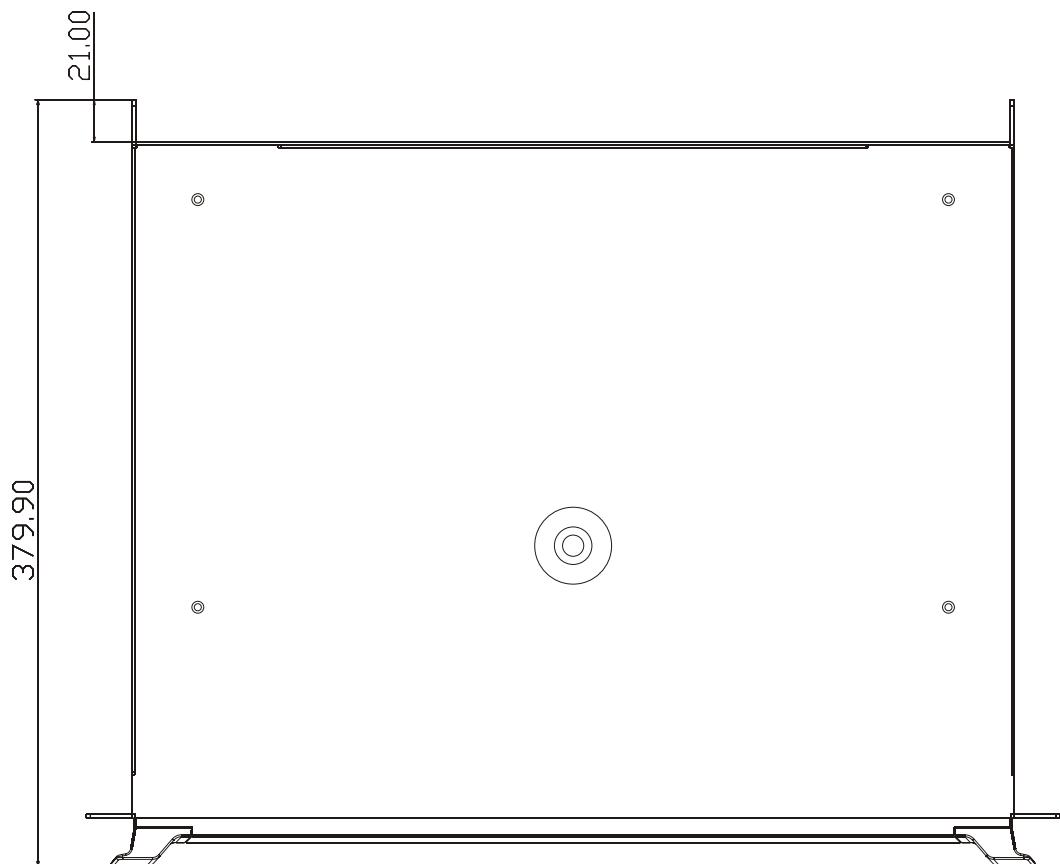
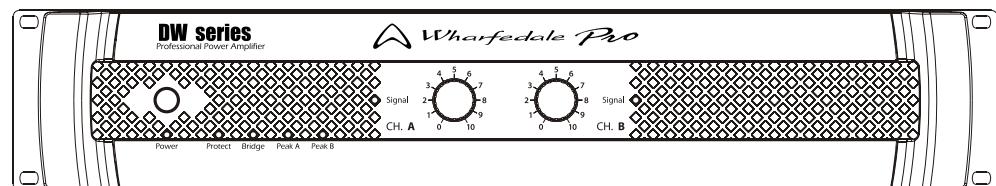
Transient voltages from powering up source equipment can damage your speakers and hearing if your amplifiers are already turned on. Always ensure that the system amplifiers are powered up last.

## INPUT TRIM VALUES

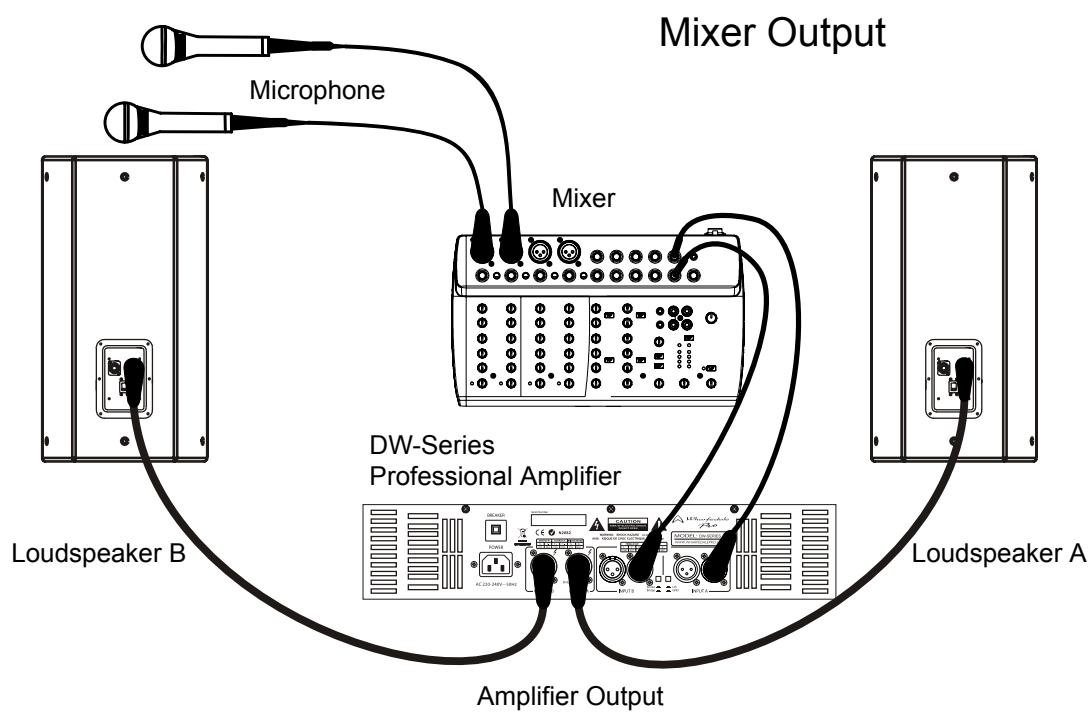
With input trim settings below 4 you will not be able to achieve full output power without clipping the input stages.

	Input Level (dBu)	
Volume	Full rated power THD+N=0.5%	Full rated power THD+N=1%
10	+1 dBu	+4 dBu
9	+4 dBu	+6 dBu
8	+8 dBu	+10 dBu
7	+12 dBu	+15 dBu
6	+16 dBu	+20 dBu
5	+19 dBu	+22 dBu
4	+21 dBu	> +22 dBu
3	> +22 dBu	> +22 dBu
2	> +22 dBu	> +22 dBu
1	> +22 dBu	> +22 dBu
0	-----	-----

## DIMENSIONAL DRAWINGS



## WIRING DIAGRAM



## SPECIFICATIONS

Model	DW800			DW1600			DW2400								
<b>Load Impedance</b>	8ohm	4ohm	2ohm	8ohm	4ohm	2ohm	8ohm	4ohm	2ohm						
<b>Rated output power</b>	2x230W	2x330W	2x340W	2x450W	2x620W	2x800W	2x590W	2x910W	2x1200W						
<b>Maximum bridged output power (THD&lt;1%, 1KHz)</b>	650W	800W	-----	1250W	1600W	-----	1800W	2400W	-----						
<b>Maximum RMS voltage swing (THD=1%, 1KHz)</b>	42.8V			60V			68.7V								
<b>Slew rate(at 1Khz)</b>	32V/us			42V/us			50V/us								
<b>Current consumption (at 1/8 maximum output power)</b>	220W	334W	380W	280W	400W	600W	380W	610W	935W						
<b>Input senstitivity (at rated output power,1KHz)</b>	1.0V			1.0V			1.0V								
<b>THD at rated output power</b>	<0.1%			<0.1%			<0.1%								
<b>IMD-SMPTE(60Hz,7KHz)</b>	<0.1%			<0.1%			<0.1%								
<b>DIM30(3.15KHz,15KHz)</b>	<0.1%			<0.1%			<0.1%								
<b>Crosstalk(ref.1KHz,at 10% rated output power)</b>	<-80dB			<-80dB			<-80dB								
<b>Frequency response(ref.1KHz)</b>	20Hz-20kHz (0~2dB)			20Hz-20kHz (0~2dB)			20Hz-20kHz (0~2dB)								
<b>Input impedance (20Hz-20KHz,balanced)</b>	20kΩ / balanced, 10kΩ / unbalanced			20kΩ / balanced, 10kΩ / unbalanced			20kΩ / balanced, 10kΩ / unbalanced								
<b>Damping factor (at 100Hz/1KHz 8Ω)</b>	>350			>450			>450								
<b>Signal to noise ratio (A weighted)</b>	105dB			106dB			106dB								
<b>Power requirements</b>	AC~230V 50Hz-60Hz														
<b>Protection</b>	Audio limiters, thermal overload, short circuit														
<b>Cooling</b>	Front-to-rear														
<b>Dimensions(WxDxH)</b>	483x380x88mm			483x380x88mm			483x380x88mm								
<b>Net weight</b>	17.5kg			19.5kg			21.5kg								
<b>Gross weight</b>	19kg			21kg			23kg								

**WHARFEDALE PRO LIMITED WARRANTY**

Wharfedale Pro DW Series products are warranted of manufacturing or material defects for a period of one year from the original date of purchase. In the event of malfunction, contact your authorized Wharfedale Pro dealer or distributor for information.

\* Be aware that warranty details may differ from country to country. Contact your dealers or distributor for information. These terms do not infringe your statutory rights.



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